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| 10/662,484 | 09/16/2003 | Hideo Okada | 1344.1124 | 9627 |
| 21171 | 7590 | 06/09/2005 | EXAMINER | |
| STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005 | | | JUBA JR, JOHN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2872 | |

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/662,484

Applicant(s)

OKADA ET AL.

Examiner

John Juba, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-18, 20 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-18 is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 20, 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Opening Remarks

The previous indication of claim 9 as containing allowable subject matter is withdrawn in light of the following, and in light of newly discovered prior art. The examiner regrets the delay in applying the art in this manner and apologizes for any inconvenience. A non-final action on the merits follows.

The examiner had mistakenly inferred that the recitation (in claim 9) "wherein an aspherical mirror which is used in a variable wavelength dispersion compensator", in a method claim, was equivalent to an active step of "using the mirror in a variable wavelength dispersion compensator". However, in amending the claims to include a series of active steps, Applicants have not adopted such an active recitation. Thus, the recitation of "an aspherical mirror which is used in a variable wavelength dispersion compensator" has been construed as descriptive of the mirror, rather than descriptive of the method, in a manipulative sense.

It is thought that the matter would be clarified by an amendment to the preambles to recite "a mirror which constitutes part of a variable wavelength dispersion compensator ~~an optical system~~" and an amendment of to claims to recite "forming an aspherical mirror as said mirror ~~which is used in a~~ in said variable wavelength dispersion compensator, on the one face of said base plate of said mirror part".

Claim Objections

Claims 2 - 4 are objected to because of the following informalities. Appropriate correction is required:

In claim 2 (lines 3 – 4), “forming wherein” should read simply, “forming”.

In claim 3, line 3, “V-grove” should read “V-groove”. Claim 4 is objected to for inheriting the same informality through its dependency from claim 3.

Claim Rejections - 35 USC § 112

Claims 1 – 8, 10, 20, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is confusing or incorrect as to the relationship between the base plate, mirror, and mirror part. As disclosed for example in connection with Figure 1, the “mirror part” comprises the base plate, the mirror, and the boss. The method includes the step of forming a mirror part including a base plate with said mirror on one face thereof. That is, the mirror is on one face of the base plate. However, claim 1 recites the step of forming a base plate “on the mirror part of said mirror”, and suggests that the base plate is formed on the mirror surface, whereas such is not the case. Claims 2 – 8 and 10 are rejected as inheriting the same deficiency through their dependency from claim 1.

Claim 21 is similarly confusing or incorrect in reciting the step of forming a base plate "on a mirror part of a mirror", whereas it is the mirror [of a "mirror part"] that is formed on one face of the base plate [of a "mirror part"].

Claim 20 is incomplete and indefinite for depending from a canceled claim. It is thought that claim 20 was to depend from claim 11.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5 - 8, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Humpal (U.S. Patent number 4,705,369). Referring for example to Figure 2 and the associated text, Humpal discloses an optical apparatus having an optical system constructed using a mirror (*i.e.*, including a mirror), comprising a mirror part having a base plate (28) formed with a mirror on one face thereof, and a "boss" (of trapezoidal cross-section) provided on the other face of the base plate opposite to the first face; and a first fixture (48) fixing only said boss, so that the mirror part excluding said boss is not in contact with other members. Thus, at some point, Humpal has performed the steps of forming the mirror part with a base plate and mirror, providing the boss, and fixing the boss, as recited. The method of using the apparatus is inherently a method capable of

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“reducing” stress distortion on the mirror surface, compared, for example to some other mounting arrangement.

With regard to claims 1 and 21, the mirror of Humpal is of cylindrical form, and thus “aspherical”. The recitation of the mirror as being “used in a variable wavelength dispersion compensator” is not an active step of using said mirror in a dispersion compensator. Rather, the recitation appears to be directed to the *intended* use of the mirror so formed. As such, it does not convey any clear structural limitations to the mirror, and it is not clear how the *intended* use of the mirror further limits the recited method in any manipulative sense.

With regard to claim 5, the first fixture is coupled to a second fixture (38)(40)(42)(44)(46)(60), *etc.*, to form a pivotable mirror module, the second fixture being mounted to a moveable (rotatable) stage (32)(58).

With regard to claim 6, the second fixture includes a receiving plate (38) formed with an angle adjusting boss (46), the movable stage is provided with a member (58) formed with an opening capable of inserting therein said angle adjusting boss, and the mirror module is installed on said moveable stage by inserting said angle adjusting boss of said receiving plate in said opening of said member.

With regard to claims 7 and 8, yaw cylinder (30) may be regarded as a travel shaft of the movable stage. Rotation of the mirror describes a circumference as recited.

Claim 21 is rejected under 35 U.S.C. 102(b) as being anticipated by Sacher (U.S. Patent number 5,867,512). Referring for example to Figure 2 and the associated text,

Sacher discloses a dispersion compensator (Col. 7, lines 50 – 60) comprising a mirror part (7)(701)(802) having a base plate (7) formed with a mirror (701) on one face thereof, and a "boss" (802) provided on the other face of the base plate opposite to the first face; and a first fixture (8) fixing only said boss, so that the mirror part excluding said boss is not in contact with other members. Thus, at some point, Sacher has performed the steps of forming a base plate on a mirror part of a mirror on one face thereof; providing a boss on the other face of the base plate; fixing the boss, as recited; and forming a mirror which is used in a variable wavelength dispersion compensator on the one face of said base plate of said mirror part.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Humpal. As set forth above for claim 1, Humpal discloses the invention substantially as claimed. However, despite the apparent illustration of the boss as being arranged with the center of the boss lying along the axis passing through a single predetermined point (56) of the mirror, Humpal does not expressly disclose the single predetermined point (56) as lying along the central axis of the mirror. However, Humpal does disclose that the single predetermined point is coincident with the central ray of the synchrotron beam

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(Col. 2, lines 1 – 10). Thus, it would have been obvious to provide the single predetermined point (56) along the central axis of the mirror, in the interest of illuminating the mirror with the synchrotron radiation equally distributed to either side of the mirror center axis, and thus in the interest of providing symmetrical heating of the mirror with respect to the center axis, as would lead to only symmetrical distortion of the mirror surface. In such an arrangement, with the boss centered along the mirror central axis, one of ordinary skill would have appreciated that the boss would have provided substantially symmetrical heat sinking capacity, which would further have prevented asymmetrical distortion of the mirror surface.

Allowable Subject Matter

Claims 11 – 18 are allowable over the prior art. Claims 2 – 4 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art, taken alone or in combination, fails to teach or fairly suggest the method

further comprising the steps of forming a first fixture including a receiving plate with an opening capable of inserting [receiving] said boss therein; providing the receiving plate with a screw hole perpendicular to a side wall of said opening; and fixing

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said boss which is inserted in the opening of said receiving plates, with a screw from the side using said screw hole, as recited in claims 2 – 4.

Similarly, the prior art fails to teach or fairly suggest a variable wavelength dispersion compensator including an *aspherical* mirror provided on one face of a base plate, a boss on the other side of the base plate, and a first fixture fixing only said boss, so that the mirror part excluding said boss is not in contact with other members, as recited in claim 11.

Response to Amendment

Applicants' amendment of claims 1 and 11 is sufficient to distinguish over the prior art to Perkins (U.S. Patent number 4,637,695), since this reference discloses neither an aspherical mirror, nor a wavelength dispersion compensator.

For the reasons stated in the opening remarks and the rejection above, Applicants' amendment of claim 1 is not sufficient to distinguish over the prior art to Humpal (U.S. Patent number 4,705,369). The amendment of claim 11 distinguishes over this reference however, since Humpal does not disclose a variable wavelength dispersion compensator.

Conclusion


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Juba whose telephone number is (571) 272-2314. The examiner can normally be reached on Mon.-Fri. 9 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Drew Dunn whose number is (571) 272-2312 and who can be reached on Mon.- Thu., 9 - 5.

The centralized fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for *all* communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2800.


JOHN JUBA, JR.
PRIMARY EXAMINER
Art Unit 2872

June 6, 2005